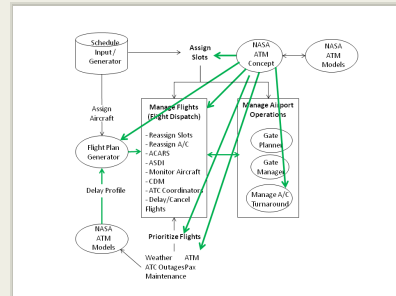
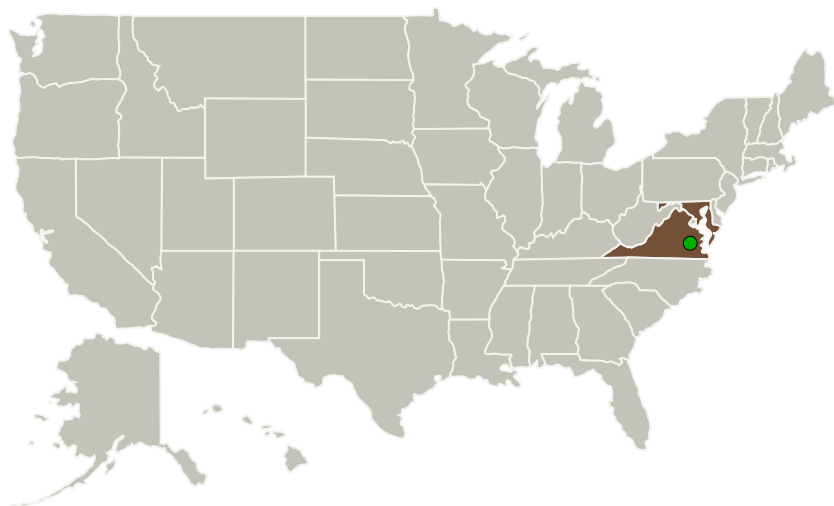


## Project Introduction

The NASA Airspace Systems Program (ASP) uses a large suite of models, simulations, and laboratories to develop and assess new ATM concepts and technologies. Most of these capabilities focus on aircraft movements, evaluating the impact of airport and airspace constraints on traffic flows. Emphasis is placed on the actions and interactions of the flight deck and air traffic controllers, including tactical ATC and traffic flow management at the FAA System Command Center and traffic management units (TMUs). The role of the airline operations center (AOC) in these analyses tends to be limited and recognized primarily as a communications mechanism and not an independent actor with designated legal responsibilities and decision making authority. In a NextGen environment, the AOC will be a major participant, as it offers greater situation awareness across the entire airline network, with superior access to data, analytical capability, and communications. Our proposed AOC simulation offers several innovations to support ASP research and the aviation community: 1. Provide a stand-alone simulation for analyzing AOCs and their complex interactions with ATM. 2. Increase the realism with which NASA can evaluate new ATM concepts, technologies, and algorithms that affect airline operations, from flight planning to flight following and re-routing, and gate-to-gate aircraft movement control. 3. Provide airlines with the ability to evaluate the effects of NASA ATM research products on their operations, investment criteria, and internal decision processes. 4. Offer a simulation that can integrate with other NASA models and simulations, expanding NASA's system-wide evaluation, gate-to-gate modeling and simulation capability. 5. Uses industry-standard inputs for flight schedules, messages, and timekeeping to maximize usability by airlines and NASA.

## Primary U.S. Work Locations and Key Partners



Airline Operations Center  
Simulation Project Image

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## Airline Operations Center Simulation, Phase I

Completed Technology Project (2014 - 2014)



Organizations Performing Work	Role	Type	Location
Robust Analytics	Lead Organization	Industry Women-Owned Small Business (WOSB)	Crofton, Maryland
● Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia

Primary U.S. Work Locations	
Maryland	Virginia

## Project Transitions

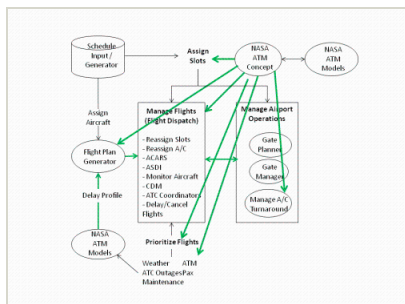
▶ **June 2014:** Project Start

✓ **December 2014:** Closed out

**Closeout Documentation:**

- Final Summary Chart(<https://techport.nasa.gov/file/137412>)

## Images

**Project Image**

Airline Operations Center  
Simulation Project Image  
(<https://techport.nasa.gov/image/132320>)

## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Organization:**

Robust Analytics

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

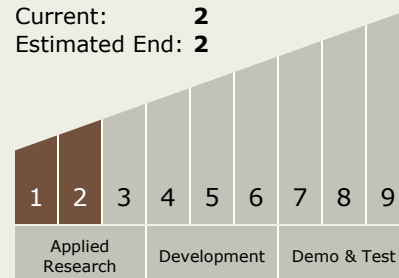
Carlos Torrez

**Principal Investigator:**

Peter F Kostiuk

## Technology Maturity (TRL)

Start: **1**  
Current: **2**  
Estimated End: **2**



## Airline Operations Center Simulation, Phase I

Completed Technology Project (2014 - 2014)



### Technology Areas

#### Primary:

- TX16 Air Traffic Management and Range Tracking Systems
  - └ TX16.3 Traffic Management Concepts

### Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System